

The addendum is hereby made part of the Contract Documents to the same extent as though it were originally included therein. Refer to "Bid Form" for acknowledgment of addenda.

All Contractors, Subcontractors and suppliers are reminded that they shall be familiar with all addenda items (as well as all parts of the construction documents) so as to understand the extent of their work and its interrelation with other trades.

To all bidders for furnishing all labor and materials necessary for the following contract:

ADDENDUM 1

NEW BERNALILLO SENIOR CENTER SANDOVAL COUNTY BERNALILLO, NEW MEXICO

ARCHITECTURAL ITEMS

PROJECT MANUAL

ITEM AD1-A1

Section 00 4325 – Product Substitution Request Form

Page 00 4325-1, Title, revise the first line to read "SECTION 00 4325"

ITEM AD1-A2

Section 03 5113 – Cementitious Roof Panel

Page 03 5113-2, Section 1.13-A-2 add the following to the end of line item: "Panel Design V-Line. "

ITEM AD1-A3

Section 07 0533– Fire and Smoke Assembly Identification

Delete this section.

ITEM AD1-A4

Section 07 4113– Metal Roof Panel

Replace both Sections 07 4113 with attached Section 07 4113– Metal Roof Panel (Dated 4-13-2016)

ITEM AD1-A5

Section 07 4213 Linear Metal Soffit and Fascia Panels

Delete this section.

ITEM AD1-A6

Section 07 6100 Sheet Metal Roofing

Delete this section.

ITEM AD1-A7

Section 07 7123 Manufactured Gutters and Downspouts

Delete this section.

ITEM AD1-A8

Section 07 2400 Exterior Insulation & Finish systems

Replace entire section with new attached Section 07 2400 EIFS (Dated 4-13-2016)

ITEM AD1-A9

Section 07 9200 Joint Sealants
Delete this section.

ITEM AD1-A10

Section 08 1213 Hollow Metal Frames
Delete this section.

ITEM AD1-A11

Section 08 Aluminum Windows
Delete this section.

ITEM AD1-A12

Section 08 7100 Door Hardware
Replace entire section with new attached Section 08 7100 Door Hardware (Dated 4-13-2016)

STRUCTURAL ITEMS

PROJECT MANUAL

ITEM AD1-S1

Specification 06 1000 Rough Carpentry

1. Section 3.01 INSTALLATION, B., Add the following, "10. Soffit tongue and groove planks to be attached with (2) 6 gage flat head screws by 2 ½" long at each supporting member. Screws shall be installed with flat head flush with plank surface. Screw heads shall be finished with flat black paint prior to installation and touched up as needed to meet architectural requirements."

ARCHITECTURAL SHEETS

ITEM AD1-A12

Sheet A121 – REFLECTED CEILING PLAN

1. In the Reflected Ceiling Legend

Revise Tongue and Groove legend to read: TONGUE & GROOVE SOFFIT –SEE SPECIFICATION 06 1000 ROUGH CARPENTRY

ITEM AD1-A13

Sheet A301 – BUILDING SECTIONS

1. In Keynote Legend

Revise Keynote 061500.TG to read: TONGUE & GROOVE SOFFIT –SEE SPECIFICATION 06 1000 ROUGH CARPENTRY

ITEM AD1-A14

Sheet A311 – WALL SECTIONS

1. In Keynote Legend

Revise Keynote 061500.WS to read: TONGUE & GROOVE SOFFIT –SEE SPECIFICATION 06 1000 ROUGH CARPENTRY

ITEM AD1-A15

Sheet A312 – WALL SECTIONS

1. In Keynote Legend

Revise Keynote 061500.WS to read: TONGUE & GROOVE SOFFIT –SEE SPECIFICATION 06 1000

ROUGH CARPENTRY

ITEM AD1-A16

Sheet A521 – DETAILS-ROOFING

Everywhere it occurs, Revise TONGUE AND GROOVE WOOD DECKING, 0.5" NOM. to read: TONGUE & GROOVE SOFFIT –SEE SPECIFICATION 06 1000 ROUGH CARPENTRY

ITEM AD1-A16

Sheet A522 – DETAILS-ROOFING

Everywhere it occurs, Revise TONGUE AND GROOVE WOOD DECKING, 0.5" NOM. to read: TONGUE & GROOVE SOFFIT –SEE SPECIFICATION 06 1000 ROUGH CARPENTRY

STRUCTURAL SHEETS

ITEM AD1-S2:

Sheet S002

1. Under GENERAL STRUCTURAL NOTES, CAST-IN-PLACE CONCRETE, D., modify to read as follows, "F'C = 4,000PSI @ 28DAYS – ANY POLISHED CONCRETE. WATER/CEMENT RATIO OF 0.45 OR LESS.

ITEM AD1-S3:

Sheet S101

1. See the attached sketches, SSK-01, SSK-02

END OF ADDENDUM NO. 1

Attachments:

Section 07 4113– Metal Roof Panel (Dated 4-13-2016)

Section 08 7100 Door Hardware (Dated 4-13-2016)

Structural "SSK" Sketch Sheets: SSK- 01 AND SSK-02 (2) pages

SECTION 07 2400
EXTERIOR INSULATION AND FINISH SYSTEMS

PART 1 GENERAL**1.1 SECTION INCLUDES**

- A. Composite wall and soffit cladding of rigid insulation and reinforced finish coating ("Class PB").
- B. Drainage and water-resistive barriers behind insulation board.

1.2 RELATED REQUIREMENTS

- A. Section 05 4000 - Cold-Formed Metal Framing: Sheathing on metal studs.
- B. Section 06 1000 - Rough Carpentry: Sheathing on wood framing.
- C. Section 07 6200 - Sheet Metal Flashing and Trim: Perimeter flashings.

1.3 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- B. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2014.
- C. ASTM C1397 - Standard Practice for Application of Class PB Exterior Insulation and Finish Systems (EIFS) and EIFS with Drainage; 2013.
- D. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2012.
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.
- F. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 2014.
- G. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference; 2000 (Reapproved 2009).
- H. ASTM E2273 - Standard Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies; 2003 (Reapproved 2011).
- I. ASTM E2485/E2485M - Standard Test Method for Freeze/Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water Resistive Barrier Coatings; 2013.
- J. ASTM E2486/E2486M - Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS); 2013.
- K. ICC-ES AC212 - Acceptance Criteria for Water Resistive Coatings used as Water Resistive Barriers over Exterior Sheathing; 2005
- L. ICC-ES AC235 - Acceptance Criteria for EIFS Clad Drainage Wall Assemblies; 2004 (Editorially revised 2009).
- M. NFPA 259 - Standard Test Method for Potential Heat of Building Materials; 2013.
- N. NFPA 268 - Standard Test Method for Determining Ignitibility of Exterior Wall Assemblies Using a Radiant Heat Energy Source; 2012.
- O. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components; 2012.

1.4 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate wall and soffit joint patterns, joint details, and molding profiles.
 - 1. Include flashing, fastening and anchorage details including mechanical fasteners, and connections and attachments to other work.
- C. Product Data: Provide data on system materials, product characteristics, performance criteria, and system limitations.

- D. Selection Samples: Submit manufacturer's standard range of samples illustrating available coating colors and textures.
- E. Verification Samples: Submit actual samples of selected coating on specified substrate, minimum 12 inches (300 mm) square, illustrating project colors and textures.
 - 1. Include sealants samples to verify color selected.
- F. Manufacturer's Installation Instructions: Indicate preparation required, installation techniques, and jointing requirements.

1.5 QUALITY ASSURANCE

- A. Maintain copy of specified installation standard and manufacturer's installation instructions at project site at all times during installation.
- B. EIFS Manufacturer Qualifications: Provide EIFS products other than insulation from the same manufacturer with qualifications as follows:
 - 1. Manufacturer of EIFS products for not less than 5 years.
 - 2. Manufacturing facilities ISO 9001 certified.
- C. Insulation Manufacturer Qualifications: Approved by manufacturer of EIFS and approved and labeled under third party quality program as required by applicable building code.
- D. Installer Qualifications: Company specializing in EIFS work, with minimum three years of documented experience, and approved by manufacturer.

1.6 MOCK-UP

- A. Construct mock-up of typical EIFS application on specified substrate, size as required to include examples of all key conditions, and including flashings, joints, and edge conditions.
- B. Locate mock-up where directed.
- C. Mock-up may remain as part of the Work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to project site in manufacturer's original, unopened containers with labels intact. Inspect materials and notify manufacturer of any discrepancies.
- B. Storage: Store materials as directed by manufacturer's written instructions.
 - 1. Protect Portland cement based materials from moisture and humidity. Store under cover off the ground in a dry location.
 - 2. Protect insulation materials from exposure to sunlight.

1.8 FIELD CONDITIONS

- A. Do not prepare materials or apply EIFS under conditions other than those described in the manufacturer's written instructions.
- B. Do not prepare materials or apply EIFS during inclement weather unless areas of installation are protected. Protect installed EIFS areas from inclement weather for a minimum of 24 hours or until dry.
- C. Do not install EIFS materials, coatings or sealants when ambient temperature is below 40 degrees F (5 degrees C).
- D. Do not leave installed insulation board exposed to sunlight for extended periods of time. Remove any UV damage to installed insulation board by thoroughly rasping prior to installation of EIFS materials.

1.9 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide manufacturer's standard material warranty, covering a period of not less than 10 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers:

1. Basis of Design: Sto Corp, STO THERM ESSENCE ci: www.stocorp.com.
2. BASF Wall Systems (Senergy, Finestone, Acrocrete, SonoWall); Product Senergy Senerflex Secondary Weather Barrier Design or Finestone Pebbletex-D or other BASF Corporation - Wall Systems equivalent: www.wallsystems.basf.com.
3. Dryvit Systems; Product: www.dryvit.com.
4. Dryvit Systems; Product Outsulation with Air/Water Barrier System: www.dryvit.ca
5. Substitutions: See Section 01 6000 - Product Requirements.

2.2 EXTERIOR INSULATION AND FINISH SYSTEM

- A. Exterior Insulation and Finish System: DRAINAGE type; reinforced finish coating on mechanically-fastened insulation board over water resistive coating over substrate; provide a complete system that has been tested to show compliance with the following characteristics; include all components of specified system and substrate(s) in tested samples.
- B. Fire Characteristics:
 1. Flammability: Pass, when tested in accordance with NFPA 285.
 2. Ignitibility: No sustained flaming when tested in accordance with NFPA 268.
 3. Potential Heat of Foam Plastic Insulation Tested Independently of Assembly: No portion of the assembly having potential heat that exceeds that of the insulation sample tested for flammability (above), when tested in accordance with NFPA 259 with results expressed in Btu per square foot (mJ/sq m).
- C. Water Penetration Resistance: No water penetration beyond the plane of the base coat/insulation board interface after 15 minutes, when tested in accordance with ASTM E331 at 6.24 psf (299 Pa) differential pressure with tracer dye in the water spray; include in tested sample at least two vertical joints and one horizontal joint of same type to be used in construction; disassemble sample if necessary to determine extent of water penetration.
- D. Drainage Efficiency: Average minimum efficiency of 90 percent, when tested in accordance with ASTM E2273 for 75 minutes.
- E. Salt Spray Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating after 300 hours exposure in accordance with ASTM B117, using at least three samples matching intended assembly, at least 4 by 6 inches (100 by 150 mm) in size.
- F. Freeze-Thaw Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating when viewed under 5x magnification after 10 cycles, when tested in accordance with ICC-ES AC219 or AC235.
- G. Weathering Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating when viewed under 5x magnification after 2000 hours of accelerated weathering conducted in accordance with ASTM G153 Cycle 1 or ASTM G155 Cycle 1, 5, or 9.
- H. Water Degradation Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating after 14 days exposure, when tested in accordance with ASTM D2247.
- I. Mildew Resistance: No growth supported on finish coating during 28 day exposure period, when tested in accordance with ASTM D3273.
- J. Abrasion Resistance Of Finish: No cracking, checking or loss of film integrity when tested in accordance with ASTM D968 with 500 liters of sand.
- K. Impact Resistance: Construct system to provide the following impact resistance without exposure of broken reinforcing mesh, when tested in accordance with ASTM E2486/E2486M:
 1. Standard: 25 to 49 in-lb (2.83 to 5.54 J), for areas not indicated as requiring higher impact resistance.
 2. Ultra-High: Over 150 in-lb (17.1 J), for areas indicated on the drawings.

2.3 MATERIALS

- A. Finish Coat: Water-based, air curing, acrylic or polymer-based finish with integral color and texture.
 1. Texture: Medium.

2. Color: As selected from manufacturer's range of standard colors.
- B. Base Coat: Fiber-reinforced, acrylic or polymer-based product compatible with insulation board and reinforcing mesh.
- C. Reinforcing Mesh: Balanced, open weave glass fiber fabric, treated for compatibility and improved bond with coating, weight, strength, and number of layers as required to meet required system impact rating.
- D. Insulation Board: Molded expanded polystyrene (EPS) board insulation, ASTM C578, Type I, with the following characteristics:
 1. Board Size: 24 by 48 inches (610 by 1220 mm).
 2. Board Size Tolerance: Plus/minus 1/16 inch (1.5 mm) from square and dimension.
 3. Board Thickness: As indicated on drawings, but no less than 1 inch (25 mm).
 4. Thickness Tolerance: plus/minus 1/16 inch (1.5 mm) maximum.
 5. Board Edges: Square.
 6. Thermal Resistance (R factor per 1 inch (25.4 mm)) at 75 degrees F (24 degrees C): 3.60 (0.63).
 7. Board Density: 0.9 nominal lb/cu ft (15 nominal kg/cu m).
 8. Surface Burning Characteristics: Flame spread/Smoke developed index of 25/450, when tested in accordance with ASTM E84.
- E. Sheathing: 5/8 inch (15.8 mm) exterior grade gypsum sheathing meeting ASTM C79/ASTM C1396/ASTM C1177 or sheathing as indicated on the drawings.
- F. Water-Resistive Barrier Coating: Fluid-applied air and water barrier membrane; applied to sheathing; furnished or approved by EIFS manufacturer.
 1. Sheathing Joint Compound and Tape: Type recommended by EIFS manufacturer for sealing joints between and penetrations through sheathing.
- G. Flashing Tape: Self-adhering rubberized asphalt tape with polyethylene backing or other material and surface conditioner furnished or approved by EIFS manufacturer.

2.4 ACCESSORY MATERIALS

- A. Insulation Fasteners: Fastener and plate system appropriate for substrate and as recommended by EIFS manufacturer.
 1. Corrosion-resistant fasteners.
- B. Metal Flashings: As specified in Section 07 6200.
- C. Sealant Materials: Compatible with EIFS materials and as recommended by EIFS manufacturer.
 1. As selected by Architect from manufacturer's full range.
- D. Exterior Soffit Vents: One piece, perforated, ASTM A653/A653M galvanized steel with G90 coating, with edge suitable for direct application to gypsum board and manufactured especially for soffit application. Provide continuous vent.

PART 3 EXECUTION

3.1 GENERAL

- A. Install in accordance with EIFS manufacturer's instructions and ASTM C1397.
- B. Where different requirements appear in either document, comply with the most stringent.
- C. Neither of these documents supercedes the provisions of the Contract Documents that define the contractual relationships between the parties or the scope of work.

3.2 EXAMINATION

- A. Verify that substrate is sound and free of oil, dirt, other surface contaminants, efflorescence, loose materials, or protrusions that could interfere with EIFS installation and is of a type and construction that is acceptable to EIFS manufacturer. Do not begin work until substrate and adjacent materials are complete and thoroughly dry.
- B. Verify that substrate surface is flat, with no deviation greater than 1/4 in (6 mm) when tested with a 10 ft (3 m) straightedge.

3.3 PREPARATION

- A. Protect contiguous work from moisture deterioration and soiling caused by application of EIFS. Provide temporary covering and other protection needed to prevent spattering of exterior finish coats on other work.

3.4 INSTALLATION - SHEATHING

- A. Secure sheathing to framing using corrosion resistant self-drilling and tapping screws at 8 inch (203 mm) centers along framing members. Lightly butt board edges. Install sheathing in accordance with manufacturer's instructions and local code requirements.

3.5 INSTALLATION - WATER-RESISTIVE BARRIER

- A. Apply barrier coating as recommended by EIFS manufacturer; prime substrate as required before application.
- B. Seal all substrate joints, transitions and intersections with materials required by EIFS manufacturer to form continuous water-resistive barrier on exterior of sheathing, using method recommended by manufacturer.
- C. At door and window openings, apply water-resistive barrier to rough opening structure before installation of metal flashings, sills, or frames, using method recommended by manufacturer.
- D. Lap flexible flashing or flashing tape at least 2 inches (50 mm) on each side of joint or transition.
- E. Exterior Soffit Vents: Install according to manufacturer's written instructions and in locations shown on the drawings. Provide vent area shown on drawings.

3.6 INSTALLATION - INSULATION

- A. Install in accordance with manufacturer's instructions.
- B. Install back wrap reinforcing mesh at all openings and terminations.
- C. On wall surfaces, install insulation boards horizontally in a running bond pattern.
- D. Fill gaps greater than 1/16 inch (1.6 mm) with strips or shims cut from the same insulation material.
- E. Place boards in a method to maximize tight joints. Stagger vertical joints and interlock at corners. Butt edges and ends tight to adjacent board and to protrusions. Achieve a continuous flush insulation surface. Fill all gaps 1/8 inch (3.2 mm) and larger with slivers of EPS insulation prior to rasping.
- F. Rasp irregularities off surface of installed insulation board.
- G. Mechanical Fastening: Space fasteners as recommended by EIFS manufacturer.
- H. Cut aesthetic reveals in outside face of insulation with high-speed router and bit configured to produce grooves, rabbets, and other features that comply with profiles and locations indicated. Do not reduce insulation thickness at aesthetic reveals to less than 3/4 inch (19 mm).
- I. Form joints for sealant application by leaving gaps between adjoining insulation edges and between insulation edges and dissimilar adjoining surfaces. Make gaps wide enough to produce joint widths indicated after encapsulating joint substrates with base coat and reinforcing mesh.
- J. Interrupt insulation for expansion joints where indicated.

3.7 INSTALLATION - BASE COAT AND FINISH

- A. Base Coat: Apply in thickness as necessary to fully embed reinforcing meshes, wrinkle free, including back-wrap at all terminations of the EIFS. Install reinforcing fabric as recommended by EIFS manufacturer.
 - 1. Lap reinforcing mesh edges and ends a minimum of 2-1/2 inches (64 mm).
 - 2. Ultra High impacted to be up batted to itself and to be overlaid with an additional layer of base coat and standard impact mesh.
 - 3. Allow base coat to dry a minimum of 24 hours at 40 degrees F (4.4 degrees C) and rising before next coating application.
- B. As required by impact resistance requirements, install second layer of reinforcing mesh embedded in second application of base coat in accordance with manufacturer's requirements.

- C. Apply finish coat after base coat has dried not less than 24 hours, apply finish with a stainless steel trowel and float finish to a uniform texture and color. Do not apply finish to areas expected to receive sealant.
- D. Finish Coat Thickness: Approximately 1/16 inch (1.5 mm) or as recommended by manufacturer.
- E. Apply sealant at finish perimeter and expansion joints in accordance with sealant manufacturer's instructions.
 - 1. Install sealant backing to control depth and configuration of sealant joint and to prevent sealant from adhering to back of joint.
 - 2. Do not apply sealant to finish.

3.8 CLEANING

- A. Clean EIFS surfaces and work areas of foreign materials resulting from EIFS operations.

3.9 PROTECTION

- A. Protect completed work from damage and soiling by subsequent work.

END OF SECTION 07 2400

SECTION 07 41 13**PART 1 GENERAL****1.01 SUMMARY**

- A. Furnish and install a double lock metal panel roofing system, including:
 - 1. Roofing manufacturer's requirements for the specified warranty.
 - 2. Preparation of roofing substrates.
 - 3. Wood nailers for roofing attachment.
 - 4. Insulation.
 - 5. Cover boards.
 - 6. Self adhering underlayment.
 - 7. Metal roof edging and copings.
 - 8. Flashings.
 - 9. Other roofing-related items specified or indicated on the drawings or otherwise necessary to provide a complete roofing system.
- B. Disposal of demolition debris and construction waste is the responsibility of Contractor. Perform disposal in manner complying with all applicable federal, state, and local regulations.
- C. Comply with the published recommendations and instructions of the roofing system manufacturer, at <http://manual.fsbp.com>.
- D. Commencement of work by the Contractor shall constitute acknowledgement by the Contractor that this specification can be satisfactorily executed, under the project conditions and with all necessary prerequisites for warranty acceptance by roofing system manufacturer. **No modification of the Contract Sum will be made for failure to adequately examine the Contract Documents or the project conditions.**

1.02 RELATED SECTIONS

- A. Section 06 10 00 - Rough Carpentry:
 - 1. Roof Sheathing: Plywood or oriented strand board (OSB), minimum 7/16 inch (11 mm) thickness with H-clip or tongue-and-grooved joints.
 - 2. Perimeter wood members for attachment of edge trim.
 - 3. Wood nailers associated with roof insulation installed by others.
- B. Section 07 62 00 - Sheet Metal Flashing and Trim: Formed metal flashing and trim items associated with non-metal roofing.
- C. Section 07 72 00 - Roof Accessories: Roof hatches and vents for installation on curbs specified in this section.
- D. Section 08 62 00 - Unit Skylights: For installation on curbs specified in this section.

1.03 REFERENCES

- A. Referenced Standards: These standards form part of this specification only to the extent they are referenced as specification requirements.
 - 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; American Society of Civil Engineers; 2011.
 - 2. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2011.
 - 3. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2008.
 - 4. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2013.

5. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2013.
6. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2013a.
7. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings; American Society for Testing and Materials; 2011.
8. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2012.
9. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference; American Society for Testing and Materials; 2005 (Reapproved 2012)
10. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference; American Society for Testing and Materials; 1995 (Reapproved 2011).
11. ASTM E1680 - Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems; American Society for Testing and Materials; 2011.
12. MBMA - Metal Roofing Systems Design Manual; Metal Building Manufacturers Association; 2012.
13. PS 1 - Construction and Industrial Plywood; 2009.
14. PS 20 - American Softwood Lumber Standard; 2010.
15. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.
16. UL 2218 - Standard for Impact Resistance of Prepared Roof Covering Materials; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. Product Data: Submit manufacturer's data sheets on each product to be installed and manufacturer's standard detail drawings applicable to this project.
 1. Installation Instructions: Provide manufacturer's instructions to installer, marked up to show exactly how all components will be installed; where instructions allow installation options, clearly indicate which option will be used.
- B. Samples: Submit following samples for approval:
 1. 12 inch (300 mm) long sample of roof panel.
 2. Roof attachment clips.
 3. Color chips for selection of finish color and sheen.
 4. After selection of finish color, provide two 3 by 5 inch (75 by 125 mm) metal samples finished in color selected.
- C. Shop Drawings: Provide drawings prepared especially for this project for all relevant conditions, including plans and elevations, sections and details, specified loads, flashings, roof edges, terminations, expansion joints, curbs, penetrations, and drainage. Specifically include interfaces with materials not supplied by metal roof panel manufacturer and identify each component and its finish.
- D. Pre-Installation Notice: Copy to show that manufacturer's required Pre-Installation Notice (PIN) has been accepted and approved by the manufacturer.
- E. Manufacturer's Installation Inspection Reports: Manufacturer may, at its option, inspect the installation at any time to appraise the installing contractor of their compliance with manufacturer's requirements. Typical inspections will include:
 1. Prior to the installation of the metal roofing panels to inspect the underlayments. The roofing contractor is responsible for assuring that the substrate is in suitable condition for the installation of the metal roofing components to the substrate.

2. Intermediate inspections to ensure proper installation of the metal roofing panels (if required).
 3. At final completion of all metal roofing system work.
 4. Submit to Owner, for the project record, a copy of each report of inspection made.
- F. Executed Warranty, by authorized company official with final close-out.
- G. Specimen Warranty: Submit prior to starting work.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Roofing installer shall have received training from metal panel manufacturer for installation of the specified roof panel system, and:
1. Current Firestone Red Shield licensed installer status.
 2. Having and using only equipment authorized and inspected by metal panel manufacturer.
 3. At least five years experience in installing specified system.
 4. Capability to provide payment and performance bond to building owner.
- B. Pre-Installation Conference: Before start of roofing work, Contractor shall hold a meeting to discuss the proper installation of materials and requirements to achieve the warranty.
1. Require attendance with all parties directly influencing the quality of roofing work or affected by the performance of roofing work.
 2. Notify Architect well in advance of meeting.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact and legible.
- B. Exercise extreme care in unloading, storing, and installing metal panels to prevent bending, warping, twisting, and surface damage.
- C. Store products above ground on well-supported platforms that provide minimum of 1:48 slope. Store under waterproof covering or indoors and provide proper ventilation of metal components to prevent condensation build-up between metal components.

1.07 WARRANTY

- A. Comply with all warranty procedures required by manufacturer, including notifications, scheduling, and inspections.
- B. Manufacturer's warranty is in addition to, and not a limitation of, other rights the owner may have under the contract documents.
- C. Warranty: Firestone Red Shield Limited Warranty covering roof panels and associated metal components, roof sheathing/insulation manufactured by Firestone, and accessories, covering weathertightness, finish, materials, labor, and workmanship.
1. Limit of Liability: No dollar limitation.
 2. Scope of Coverage: Repair leaks in the roofing system caused by:
 - a. Ordinary wear and tear of the elements.
 - b. Manufacturing defect in Firestone brand materials.
 - c. Defective workmanship used to install these materials.
 - d. Damage due to winds up to 55 mph.
 3. Not Covered:
 - a. Materials made by entities other than Firestone Building Products
 - b. Damage due to winds in excess of 55 mph.
 - c. Damage due to hurricanes or tornadoes.
 - d. Hail.
 - e. Intentional damage.
 - f. Unintentional damage due to normal rooftop inspections, maintenance, or service.

- D. Acrylume Finish Warranty: Provide Firestone standard Red Shield non-prorated warranty covering durability of Acrylume finish, to include corrosion caused by exposure to normal atmospheric conditions.
1. Warranty Period: 20 years commencing on date of substantial completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers:
1. Unaclad; Product UC-6: <http://www.firestonemetal.com>.
 - a. Metal Roof Panels and Associated Sheet Metal Components: Firestone Building Products LLC, Carmel, IN: www.firestonebpc.com, as represented by Upland Corporation, 404 Towner Ave NE Albuquerque NM 87106 (505) 266-3800
 - b. Provide all components of system supplied or specified by same manufacturer.
 - c. Roofing systems manufactured by others may be acceptable provided the roofing system is completely equivalent in materials and warranty conditions and the manufacturer meets the following qualifications:
 - d. Specializing in manufacturing the roofing system to be provided.
 - e. Minimum ten years of experience manufacturing the roofing system to be provided.
 - f. Able to provide a no dollar limit, single source roof system warranty that is backed by corporate assets in excess of one billion dollars.
 - g. ISO 9002 certified.
 - h. Able to provide waterproofing membrane underlayment.
 2. MBCI; Product LokSeam: www.mbc.com
 3. Centria; Product SDP 175: www.centria.com
 4. Unaclad; Product UC-6: <http://www.firestonemetal.com>.
 5. Substitutions: See Section 01 6000 - Product Requirements.
 - a. Submit evidence that the proposed substitution complies with the specified requirements.

2.02 ROOFING SYSTEM DESCRIPTION

- A. Roofing System: Standing seam metal roof panels and other components, together forming a watertight assembly having the following characteristics:
1. Warranty: 20 year.
 2. Panel Seam Type: Mechanically double-locked in the field with a mechanical seamer.
 3. Panel Material: Acrylume: Steel, 24 gauge (0.61 mm) AZ55 Hot-dipped Galvalume (55% Aluminum and 43+% zinc) steel sheet with a clear organic polymer surface treatment, commercial weight, meeting ASTM A 792/A792M.
 3. Design Loads: In accordance with ASCE 7, current edition.
 - a. Design Snow Load: Not less than 20 psf (960 kPa).
 - b. Maximum Deflection Under Snow Load: Not more than L/180 or as recommended by ASCE 7, whichever is less.
 - c. Wind Uplift Resistance: Class 90 rating, minimum, when tested in accordance with UL 580.
 - d. Wind Pull-Off Resistance: No failure of roof panel or fasteners when tested in accordance with ASTM E1592 for negative loading equal to negative design wind load; for assemblies not tested, capacity for gauge, span, or loading may be determined by interpolating between test values only.
 4. Impact Resistance: Minimum of Class 4, when tested in accordance with UL 2218.
 5. Thermal Effects: Design roof panels and their attachment to allow free movement in response to expansion and contraction forces resulting from temperature variation, as specified in the MBMA Metal Roofing Systems Design Manual.
 6. External Fire Resistance: Class A, B, C, when tested in accordance with ASTM E108 or UL 790.

7. Provide all necessary members and connections, whether indicated in the manufacturer's standard detail drawings or not.
 8. Accessories and Fasteners: Capable of resisting the specified design wind uplift forces and allowing for thermal movement of the roof panel system, not restricting free movement of the roof panel system resulting from thermal forces except at designed points of roof panel fixity.
- B. Roof System Components: In order from the top down:
1. Metal roofing panels and trim.
 2. Underlayment: Self-adhering, high temperature underlayment over entire roof; material as specified.

2.03 ROOF PANELS AND SHEET METAL FABRICATIONS

- A. Roof Panels: Firestone UNA-CLAD UC-6 Standing Seam Roofing; roll formed roofing panels produced in a permanent factory environment with fixed-base roll-forming equipment, or field formed by Firestone licensed field fabricator.
1. Seam Height: 2 inches (50.8 mm).
 2. Seam Spacing (Panel Width): 18 inches (475.2 mm), optimal.
 2. Profile: Flat.
 3. Texture: Smooth.
 4. Clips: As tested and supplied by manufacturer.
 5. Provide factory applied integral seam sealant in leg of panel.
 6. Form roofing panels in longest practical lengths, true to shape, accurate in size, square, and free from distribution or manufacturing defects.
- B. Sheet Metal Components Associated with Metal Roof Panels: Made by same manufacturer and compatible with roof panels; of not less than minimum thickness required by roof panel manufacturer.
1. Fabricate trim, flashing, and accessories to roofing manufacturer's specified or approved profiles.
 2. Exposed metal components of same finish as panels.
 3. Color: Same as panels.
 4. Provide the following formed sheet metal components:
 - a. Eave.
 - b. High eave.
 - c. Valleys
 - d. Rake edge.
 - e. Vertical fascia.
 - f. Side wall flashing.
 - g. Pipe and other penetration flashings, for penetrations over 8 inches.
 - h. All building flashings.

2.04 ACCESSORY MATERIALS

- A. Self-Adhered Ice and Water Shield Underlayment: Rubberized sheet waterproof membrane complying with ASTM D 1970/D1970M, self-adhering. Refer to installation requirements to satisfy Warranty requirements (roof slopes at 2:12 or less will require a double layer of membrane to satisfy warranty requirements.)
1. Resistance to Direct Exposure: At least 90 days.
 2. Minimum High Temperature Resistance: 230 degrees F (110 degrees C).
 3. Water Vapor Permeance: 0.1 perm (5.7 ng/(Pa s sq m)), maximum.
 4. Acceptable Product: Clad-Gard SA-FR by Firestone
- B. Fasteners: In strict accordance with metal roof panel manufacturer's requirements; minimize exposed fasteners.
1. Fasteners Exposed to Weather: Sealed or with sealed washers on exterior side of covering to waterproof fastener penetration; washer material compatible with screw head; minimum 3/8

- inch (9.5 mm) diameter washer for structural connections; gasket portion of fasteners or washers made of EPDM, neoprene, or other equally durable elastomeric material.
- 2. Fasteners Exposed to View: Head of color matching panel or component in which installed.
- C. Installation Clips: Manufacturer standard galvanized or stainless steel clips, as required by panel selection, for concealed securement of panels. Use only those approved for use by the roof system manufacturer.
- D. Bearing Plates for Installation Clip attachment, per roofing product manufacturer's recommendation.
- E. Wood Nailers: PS 20 dimension lumber, Structural Grade No. 2 or better Southern Pine, Douglas Fir; pressure preservative treated.
 - 1.Width: 3-1/2 inches, nominal minimum.

PART 3 INSTALLATION

3.01 GENERAL

- A. Install roofing, insulation, flashings, and accessories in accordance with roofing manufacturer's published instructions and recommendations for the specified roofing system. Where manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.
- B. Obtain all relevant instructions and maintain copies at project site for duration of installation period.
- C. Verify that shop drawings prepared by metal roof panel manufacturer have been approved and are available to installers; do not use drawings prepared by others for installation drawings.
- D. Verify that the specifications and drawing details are workable and not in conflict with the roofing manufacturer's recommendations and instructions; start of work constitutes acceptance of project conditions and requirements.
- E. Do not start work until Pre-Installation Notice has been submitted to manufacturer as notification that this project requires a manufacturer's warranty.
- F. Perform work using competent and properly equipped personnel.
- G. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.
- H. Install roofing only when surfaces are clean, dry, smooth and free of snow or ice; do not apply roofing during inclement weather or when ambient conditions will not allow proper application; consult manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60 to 80 degrees F (15 to 25 degrees C).
- I. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.
 - 1. Protect from spills and overspray from bitumen, adhesives, sealants and coatings.
 - 2. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.
 - 3. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trades.
- J. Until ready for use, keep materials in their original containers as labeled by the manufacturer.
- K. Consult panel manufacturer's instructions, container labels, and Material Safety Data Sheets (MSDS) for specific safety instructions. Keep all adhesives, sealants, primers and cleaning materials away from all sources of ignition.

3.02 EXAMINATION

- A. Examine roof deck to determine that it is sufficiently rigid to support installers and their mechanical equipment and that deflection will not strain or rupture roof components or deform deck.
- B. Verify that surfaces and site conditions are ready to receive work. Correct defects in the substrate before commencing with roofing work.
- C. Verify that the substructure installation is in accordance with the approved shop drawings and roof panel manufacturer's requirements, that the fasteners are correct for the substrate, and the substrate is installed to accommodate and support the appropriate clip spacing and attachment.
- D. Verify that installed work of other trades that such work is complete to a point where the roofing system installation may commence.
- E. Verify that roof openings, curbs, pipes, sleeves, ducts, vents, and other penetrations through roof substrate are complete and properly located.
- F. In event of discrepancy, notify Architect in writing; do not proceed with installation until discrepancies have been resolved.

3.03 UNDERLAYMENT INSTALLATION

- A. Install CladGard underlayment in accordance with manufacturer's instructions over entire roofing surface:

Note: At roof slope areas less than 2":12" provide a complete double layer of self adhering underlayment membrane to a roll width of 36" install with offset seams.

3.04 ROOF PANEL INSTALLATION

- A. Install the metal roof panel system in accordance with the manufacturer's instructions, installation drawings, and approved shop drawings, so that it is weathertight and allows for thermal movement.
- B. Locate space and fasten all clips in accordance with roof panel manufacturer's recommendations. For required fasteners, use proper torque settings to obtain controlled uniform compression for a positive seal without rupturing the sealing washers.
- C. Panels must be locked in the field by a mechanical seamer.
- D. Do not place utility penetrations through the panel seams.
- E. Do not allow panels or trim to come into contact with dissimilar materials (i.e. copper, lead, graphite, treated lumber, mortar, etc). Protect from water run-off from these materials.
- F. Perform field cutting of panels and related sheet metal components by means of hand or electric shears. At no time shall a hot/friction saw be used.
- G. Remove protective film immediately after installation.

3.05 FLASHING AND ACCESSORIES INSTALLATION

- A. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by roof panel manufacturer's recommendations and details.
- B. Install metal trim, accessories, and edgings in locations indicated on the drawings.
 - 1. Follow roofing manufacturer's instructions.
 - 2. Remove protective plastic surface film immediately before installation.
- C. Flashing at Walls, Curbs, and Other Vertical and Sloped Surfaces: Install weathertight flashing at all walls, curbs, parapets, curbs, skylights, and other vertical and sloped surfaces that the roofing system abuts to; extend flashing at least 8 inches high above system surface.
- D. Flashing at Penetrations: Flash all penetrations passing through the panel; make flashing seals directly to the penetration.
 - 1. Pipes, Round Supports, and Similar Items: Flash with specified pre-molded pipe flashings wherever practical.

2. Where pre-molded pipe flashings are not practical, provide flashing detail as recommended by metal panel manufacturer.

3.06 FIELD QUALITY CONTROL

- A. Inspection by Manufacturer: Provide final inspection of the roofing system by a Technical Representative employed by roofing system manufacturer specifically to inspect installation for warranty purposes (i.e. not a sales person).
- B. Perform all corrections necessary for issuance of warranty.

3.07 ADJUSTING AND CLEANING

- A. Repair panels having minor damage.
- B. Remove panels damaged beyond repair and replace with new panels to match adjacent undamaged panels.
- C. Clean exposed panel surfaces promptly after installation in accordance with recommendations of panel and coating manufacturers.
- D. Clean all contaminants generated by roofing work from building and surrounding areas, including adhesives, sealants, and coatings.
- E. Repair or replace building components and finished surfaces damaged or defaced due to the work of this section; comply with recommendations of manufacturers of components and surfaces.
- F. Remove leftover materials, trash, debris, equipment from project site and surrounding areas.

3.08 PROTECTION

- A. Where construction traffic must continue over finished roof panels, provide durable protection and replace or repair damaged roofing to original condition.

END OF SECTION

SECTION 087100 – DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes commercial door hardware for the following:
 - 1. Swinging doors.
 - 2. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
 - 2. Electromechanical door hardware.
 - 3. Automatic operators.
 - 4. Cylinders specified for doors in other sections.
- C. Related Sections:
 - 1. Division 08 Section "Door Hardware Schedule".
 - 2. Division 08 Section "Hollow Metal Doors and Frames".
 - 3. Division 08 Section "Flush Wood Doors".
 - 4. Division 08 Section "Automatic Door Operators".
 - 5. Division 08 Section "Access Control Hardware".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 - Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC - International Building Code.
 - 3. NFPA 70 - National Electrical Code.
 - 4. NFPA 80 - Fire Doors and Windows.
 - 5. NFPA 101 - Life Safety Code.
 - 6. NFPA 105 - Installation of Smoke Door Assemblies.
 - 7. UL/ULC and CSA C22.2 – Standards for Automatic Door Operators Used on Fire and Smoke Barrier Doors and Systems of Doors.
 - 8. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards:

1. ANSI/BHMA Certified Product Standards - A156 Series
2. UL10C – Positive Pressure Fire Tests of Door Assemblies

1.3 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.
 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - h. Warranty information for each product.
 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Shop Drawings: Details of electrified access control hardware indicating the following:
 1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:

- a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
 - b. Complete (risers, point-to-point) access control system block wiring diagrams.
 - c. Wiring instructions for each electronic component scheduled herein.
 2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.
- D. Proof of Certification: Provide copy of manufacturer(s) official certification or accreditation document indicating proof of status as a qualified installer of Windstorm assemblies.
- E. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- F. Informational Submittals:
1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.
- G. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Submittals.

1.4 QUALITY ASSURANCE

- A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.
- B. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- C. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.

- D. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
 - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
 - 2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- E. Each unit to bear third party permanent label demonstrating compliance with the referenced standards.
- F. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
 - 1. Function of building, purpose of each area and degree of security required.
 - 2. Plans for existing and future key system expansion.
 - 3. Requirements for key control storage and software.
 - 4. Installation of permanent keys, cylinder cores and software.
 - 5. Address and requirements for delivery of keys.
- G. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
 - 1. Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
 - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
 - 3. Review sequence of operation narratives for each unique access controlled opening.
 - 4. Review and finalize construction schedule and verify availability of materials.
 - 5. Review the required inspecting, testing, commissioning, and demonstration procedures
- H. At completion of installation, provide written documentation that components were applied to manufacturer's instructions and recommendations and according to approved schedule.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.

- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.6 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door Hardware and Electrical Connections: Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.
- C. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.7 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - 1. Structural failures including excessive deflection, cracking, or breakage.
 - 2. Faulty operation of the hardware.
 - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 4. Electrical component defects and failures within the systems operation.
- C. Standard Warranty Period: One year from date of Substantial Completion, unless otherwise indicated.
- D. Special Warranty Periods:
 - 1. Seven years for heavy duty cylindrical (bored) locks and latches.
 - 2. Five years for exit hardware.
 - 3. Twenty five years for manual surface door closer bodies.
 - 4. Two years for electromechanical door hardware.

1.8 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE

- A. General: Provide door hardware for each door to comply with requirements in Door Hardware Sets and each referenced section that products are to be supplied under.
- B. Designations: Requirements for quantity, item, size, finish or color, grade, function, and other distinctive qualities of each type of door hardware are indicated in the Door Hardware Sets at the end of Part 3. Products are identified by using door hardware designations, as follows:
- C. Named Manufacturer's Products: Product designation and manufacturer are listed for each door hardware type required for the purpose of establishing requirements. Manufacturers' names are abbreviated in the Door Hardware Schedule.
- D. Substitutions: Requests for substitution and product approval for inclusive mechanical and electromechanical door hardware in compliance with the specifications must be submitted in writing and in accordance with the procedures and time frames outlined in Division 01, Substitution Procedures. Approval of requests is at the discretion of the architect, owner, and their designated consultants.

2.2 HANGING DEVICES

- A. Hinges: ANSI/BHMA A156.1 certified butt hinges with number of hinge knuckles as specified in the Door Hardware Sets.
 - 1. Quantity: Provide the following hinge quantity, unless otherwise indicated:
 - a. Two Hinges: For doors with heights up to 60 inches.
 - b. Three Hinges: For doors with heights 61 to 90 inches.
 - c. Four Hinges: For doors with heights 91 to 120 inches.
 - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
 - 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
 - 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:

- a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.
 - 4. Hinge Options: Comply with the following where indicated in the Hardware Sets or on Drawings:
 - a. Non-removable Pins: Provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for the all out-swinging lockable doors.
 - 5. Acceptable Manufacturers:
 - a. Hager Companies (HA).
 - b. McKinney Products (MK).
 - c. Stanley Hardware (ST).
- B. Continuous Geared Hinges: ANSI/BHMA A156.26 Grade 1-600 certified continuous geared hinge. with minimum 0.120-inch thick extruded 6060 T6 aluminum alloy hinge leaves and a minimum overall width of 4 inches. Hinges are non-handed, reversible and fabricated to template screw locations. Factory trim hinges to suit door height and prepare for electrical cut-outs.
- 1. Acceptable Manufacturers:
 - a. McKinney Products (MK).
 - b. Pemko Manufacturing (PE).
 - c. Stanley Hardware (ST).

2.3 POWER TRANSFER DEVICES

- A. Electrified Quick Connect Continuous Geared Transfer Hinges: Provide electrified transfer continuous geared hinges with a 12" removable service panel cutout accessible without de-mounting door from the frame. Furnish with Molex™ standardized plug connectors with sufficient number of concealed wires (up to 12) to accommodate the electrified functions specified in the Door Hardware Sets. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Wire nut connections are not acceptable.
 - 1. Acceptable Manufacturers:
 - a. Bommer Industries (BO) - SER-QC (# of wires) Option.
 - b. Pemko Manufacturing (PE) - SER-QC (# wires) Option.
- B. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to through-door wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified

hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.

1. Acceptable Manufacturers:
 - a. McKinney Products (MK) – QC-C Series.
 - b. Stanley Hardware (ST) – WH Series.

2.4 DOOR OPERATING TRIM

A. Flush Bolts and Surface Bolts: ANSI/BHMA A156.3 and A156.16, Grade 1, certified.

1. Manual flush bolts to be furnished with top rod of sufficient length to allow bolt location approximately six feet from the floor.
2. Furnish dust proof strikes for bottom bolts.
3. Surface bolts to be minimum 8" in length and U.L. listed for labeled fire doors and U.L. listed for windstorm components where applicable.
4. Provide related accessories (mounting brackets, strikes, coordinators, etc.) as required for appropriate installation and operation.
5. Acceptable Manufacturers:
 - a. Door Controls International (DC).
 - b. Rockwood Manufacturing (RO).
 - c. Trimco (TC).

B. Door Push Plates and Pulls: ANSI/BHMA A156.6 certified door pushes and pulls of type and design specified in the Hardware Sets. Coordinate and provide proper width and height as required where conflicting hardware dictates.

1. Push/Pull Plates: Minimum .050 inch thick, size as indicated in hardware sets, with beveled edges, secured with exposed screws unless otherwise indicated.
2. Door Pull and Push Bar Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door unless otherwise indicated.
3. Offset Pull Design: Size, shape, and material as indicated in the hardware sets. Minimum clearance of 2 1/2-inches from face of door and offset of 90 degrees unless otherwise indicated.
4. Fasteners: Provide manufacturer's designated fastener type as indicated in Hardware Sets.
5. Acceptable Manufacturers:
 - a. Burns Manufacturing (BU).
 - b. Rockwood Manufacturing (RO).
 - c. Trimco (TC).

2.5 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy.
- B. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as locksets and exit devices, unless otherwise indicated.
- C. Cylinders: Original manufacturer cylinders complying with the following:
 - 1. Mortise Type: Threaded cylinders with rings and cams to suit hardware application.
 - 2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 - 3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
 - 4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 - 5. Keyway: Manufacturer's Standard.
- D. Patented Cylinders: ANSI/BHMA A156.5, Grade 1, certified cylinders employing a utility patented and restricted keyway requiring the use of patented controlled keys. Provide bump resistant, fixed core cylinders as standard with solid recessed cylinder collars. Cylinders are to be factory keyed where permanent keying records will be established and maintained.
 - 1. Provide a 6 pin multi-level master key system comprised of patented controlled keys and security and high security cylinders operated by one (1) key of the highest level. Geographical exclusivity to be provided for all security and high security cylinders and UL437 certification where specified.
 - a. Level 1 Cylinders: Provide utility patented controlled keyway cylinders that are furnished with patented keys available only from authorized distribution.
 - b. Level 2 Cylinders: Provide utility patented controlled keyway and side bar locking incorporating unique angled bottom pins for geographical exclusivity. Cylinders constructed to provide protection against bumping and picking.
 - c. Level 3 Cylinders: Provide utility patented controlled keyway and side bar locking incorporating unique angled bottom pins for geographical exclusivity. Cylinders to be UL437 certified and constructed to provide protection against bumping, picking, and drilling.
 - d. Refer to hardware sets for specified levels.
 - 2. Acceptable Manufacturers:
 - a. Sargent Manufacturing (SA) - Degree Series.
 - b. Corbin Russwin (RU) – Access 3 Series.
- E. Key Quantity: Provide the following minimum number of keys:
 - 1. Change Keys per Cylinder: Two (2)
 - 2. Master Keys (per Master Key Level/Group): Five (5).
 - 3. Construction Keys (where required): Ten (10).

- F. Construction Keying: Provide construction master keyed cylinders.

2.6 MECHANICAL LOCKS AND LATCHING DEVICES

- A. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Grade 1 certified.
1. Furnish with solid cast levers, standard 2 3/4" backset, and 1/2" (3/4" at rated paired openings) throw brass or stainless steel latchbolt.
 2. Locks are to be non-handed and fully field reversible.
 3. Acceptable Manufacturers:
 - a. Corbin Russwin Hardware (RU) – CL3300 Series.
 - b. Sargent Manufacturing (SA) – 10 Line.
 - c. Stanley Best (BE) – 9K Series.

- B.

2.7 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
 4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
1. Strikes for Mortise Locks and Latches: BHMA A156.13.
 2. Strikes for Bored Locks and Latches: BHMA A156.2.
 3. Strikes for Auxiliary Deadlocks: BHMA A156.5.
 4. Dustproof Strikes: BHMA A156.16.

2.8 ELECTRIC STRIKES

- A. Standard Electric Strikes: Heavy duty, cylindrical and mortise lock electric strikes conforming to ANSI/BHMA A156.31, Grade 1, UL listed for both Burglary Resistance and for use on fire rated door assemblies. Stainless steel construction with dual interlocking plunger design tested to exceed 3000 lbs. of static strength and 350 ft-lbs. of dynamic strength. Strikes tested for a

minimum 1 million operating cycles. Provide strikes with 12 or 24 VDC capability and supplied standard as fail-secure unless otherwise specified. Option available for latchbolt and latchbolt strike monitoring indicating both the position of the latchbolt and locked condition of the strike.

1. Acceptable Manufacturers:
 - a. Folger Adam EDC (FO).
 - b. HES (HS).
 - c. Security Door Controls (SD).

2.9 CONVENTIONAL EXIT DEVICES

A. General Requirements: All exit devices specified herein shall meet or exceed the following criteria:

1. At doors not requiring a fire rating, provide devices complying with NFPA 101 and listed and labeled for "Panic Hardware" according to UL305. Provide proper fasteners as required by manufacturer including sex nuts and bolts at openings specified in the Hardware Sets.
2. Where exit devices are required on fire rated doors, provide devices complying with NFPA 80 and with UL labeling indicating "Fire Exit Hardware". Provide devices with the proper fasteners for installation as tested and listed by UL. Consult manufacturer's catalog and template book for specific requirements.
3. Except on fire rated doors, provide exit devices with hex key dogging device to hold the pushbar and latch in a retracted position. Provide optional keyed cylinder dogging on devices where specified in Hardware Sets.
4. Devices must fit flat against the door face with no gap that permits unauthorized dogging of the push bar. The addition of filler strips is required in any case where the door light extends behind the device as in a full glass configuration.
5. Electromechanical Options: Subject to same compliance standards and requirements as mechanical exit devices, electrified devices to be of type and design as specified in hardware sets. Include any specific controllers when conventional power supplies are not sufficient to provide the proper inrush current.
6. Lever Operating Trim: Where exit devices require lever trim, furnish manufacturer's heavy duty escutcheon trim with threaded studs for thru-bolts.
 - a. Lock Trim Design: As indicated in Hardware Sets, provide finishes and designs to match that of the specified locksets.
 - b. Where function of exit device requires a cylinder, provide a cylinder (Rim or Mortise) as specified in Hardware Sets.
7. Vertical Rod Exit Devices: Provide and install interior surface and concealed vertical rod exit devices as Less Bottom Rod (LBR) unless otherwise indicated. Provide dust proof strikes where thermal pins are required to project into the floor.

8. Narrow Stile Applications: At doors constructed with narrow stiles, or as specified in Hardware Sets, provide devices designed for maximum 2" wide stiles.
 9. Dummy Push Bar: Nonfunctioning push bar matching functional push bar.
 10. Rail Sizing: Provide exit device rails factory sized for proper door width application.
 11. Through Bolt Installation: For exit devices and trim as indicated in Door Hardware Sets.
- B. Conventional Push Rail Exit Devices (Heavy Duty): ANSI/BHMA A156.3, Grade 1 certified panic and fire exit hardware devices furnished in the functions specified in the Hardware Sets. Exit device latch to be stainless steel, pullman type, with deadlock feature.
1. Acceptable Manufacturers:
 - a. Corbin Russwin Hardware (RU) - ED4000 / ED5000 Series.
 - b. Sargent Manufacturing (SA) - 80 Series.
 - c. Von Duprin (VD) - 35A/98 XP Series.
- C. Tube Steel Removable Mullions: ANSI/BHMA A156.3 removable steel mullions with malleable-iron top and bottom retainers and a primed paint finish.
1. Provide keyed removable feature where specified in the Hardware Sets.
 2. Provide stabilizers and mounting brackets as required.
 3. Provide electrical quick connection wiring options as specified in the hardware sets.
 4. Acceptable Manufacturers:
 - a. Corbin Russwin Hardware (RU) - 700/900 Series.
 - b. Sargent Manufacturing (SA) - 980S Series.
 - c. Von Duprin (VD) - 9954 Series.

2.10 DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:
1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers including installation and adjusting information on inside of cover.
 2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
 3. Cycle Testing: Provide closers which have surpassed 15 million cycles in a test witnessed and verified by UL.

4. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the physically handicapped, provide units complying with ANSI ICC/A117.1.
 5. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
 6. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
 7. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates, and through-bolt and security type fasteners as required for proper installation.
- B. Door Closers, Surface Mounted (Heavy Duty): ANSI/BHMA A156.4, Grade 1 surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control. Provide non-handed units standard.
1. Acceptable Manufacturers:
 - a. Corbin Russwin Hardware (RU) – DC6000 Series.
 - b. LCN Closers (LC) - 4040 Series.
 - c. Norton Door Controls (NO) - 7500 Series.
- C. Door Closers, Surface Mounted (Unitrol): Unitrol arms to have door stop mechanism to absorb dead stop shock on arm and top hinge. Hold-open arms to have a spring loaded mechanism in addition to shock absorber assembly. Arms to be provided with rigid steel main arm and secondary arm lengths proportional to the door width.
1. Acceptable Manufacturers:
 - a. Corbin Russwin Hardware (RU) - Unitrol Series.
 - b. Norton Door Controls (NO) - Unitrol Series.
 - c. Yale Locks and Hardware (YA) - Unitrol Series.
 - d.
- D. Door Closers, Surface Mounted (Commercial Duty): ANSI/BHMA 156.4, Grade 1 certified surface mounted, institutional grade door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron or aluminum alloy body construction, with adjustable backcheck, closing sweep, and latch speed control valves. Provide non-handed units standard.
1. Acceptable Manufacturers:
 - a. Corbin Russwin Hardware (RU) - DC6000 Series.

- b. LCN Closers (LC) – 1450 Series.
- c. Norton Door Controls (NO) - 8500 Series.

2.11 AUTOMATIC DOOR OPERATORS

- A. General: Provide operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for compliance with UL 325. Coordinate operator mechanisms with door operation, hinges, and activation devices.
 - 1. Fire-Rated Doors: Provide door operators for fire-rated door assemblies that comply with NFPA 80 for fire-rated door components and are listed and labeled by a qualified testing agency.
- B. Electrohydraulic Door Operators: Self-contained low-pressure units with rack and pinion design contained within a cast aluminum housing. Door closing speed controlled by independent hydraulic adjustment valves in the sweep and latch range of the closing cycle. Operator is to provide conventional door closer opening and closing forces unless the power operator motor is activated. Unit is to include an adjustable hydraulic backcheck valve to cushion the door speed if opened violently. Non-handed units for both push and pull side applications.
- C. Brackets and Reinforcements: Manufacturer's standard, fabricated from aluminum with nonferrous shims for aligning system components.
- D. Standard: Certified ANSI/BHMA A156.19.
 - 1. Performance Requirements:
 - a. Opening Force if Power Fails: Not more than 15 lbf required to release a latch if provided, not more than 30 lbf required to manually set door in motion, and not more than 15 lbf required to fully open door.
 - b. Entrapment Protection: Not more than 15 lbf required to prevent stopped door from closing or opening.
- E. Configuration: Surface mounted. Door operators to control single swinging and pair of swinging doors.
- F. Operation: Power opening and spring closing operation capable of meeting ANSI A117.1 accessibility guideline. Provide time delay for door to remain open before initiating closing cycle as required by ANSI/BHMA A156.19. When not in automatic mode, door operator to function as manual door closer with fully adjustable opening and closing forces, with or without electrical power.
 - 1. On-off switch to control power to be key switch operated.
- G. Features: Operator units to have full feature adjustments for door opening and closing force and speed, backcheck, motor assist acceleration from 0 to 30 seconds, time delay, vestibule interface delay, obstruction recycle, and hold open time from 0 up to 30 seconds.

- H. Provide outputs and relays on board the operator to allow for coordination of exit device latch retraction, electric strikes, magnetic locks, card readers, safety and motion sensors and specified auxiliary contacts.
- I. Activation Devices: Provide activation devices in accordance with ANSI/BHMA A156.19 standard, for condition of exposure indicated and for long term, maintenance free operation under normal traffic load operation. Coordinate activation control with electrified hardware and access control interfaces. Activation switches are standard SPST, with optional DPDT availability.
- J. Signage: As required by cited ANSI/BHMA A156.19 standard for the type of operator.
 - 1. Acceptable Manufacturers:
 - a. Besam Automated Entrance Systems (BE) - SW100 Series.
 - b. Norton Door Controls (NO) - 6000 Series.
 - c. Stanley Access (ST) - Magic Force Series.

2.12 ARCHITECTURAL TRIM

A. Door Protective Trim

- 1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
- 2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
- 3. Protection Plates: ANSI/BHMA A156.6 certified protection plates (kick, armor, or mop), fabricated from the following:
 - a. Stainless Steel: 300 grade, .050-inch thick.
- 4. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
- 5. Acceptable Manufacturers:
 - a. Burns Manufacturing (BU).
 - b. Rockwood Manufacturing (RO).
 - c. Trimco (TC).

2.13 DOOR STOPS AND HOLDERS

- A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.
- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 certified door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
 - 1. Acceptable Manufacturers:
 - a. Burns Manufacturing (BU).
 - b. Rockwood Manufacturing (RO).
 - c. Trimco (TC).
- C. Overhead Door Stops and Holders: ANSI/BHMA A156.6, Grade 1 certified overhead stops and holders to be surface or concealed types as indicated in Hardware Sets. Track, slide, arm and jamb bracket to be constructed of extruded bronze and shock absorber spring of heavy tempered steel. Provide non-handed design with mounting brackets as required for proper operation and function.
 - 1. Acceptable Manufacturers:
 - a. Dorma (DO).
 - b. Rixson Door Controls (RF).
 - c. Rockwood Manufacturing (RO).

2.14 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
 - 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
 - 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and UBC 7-2, Fire Tests of Door Assemblies.

- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Acceptable Manufacturers:
 - 1. National Guard Products (NG).
 - 2. Pemko Manufacturing (PE).
 - 3. Reese Enterprises, Inc. (RS).

2.15 ELECTRONIC ACCESSORIES

- A. Request-to-Exit Motion Sensor: Request-to-Exit Sensors motion detectors specifically designed for detecting exiting through a door from the secure area to a non-secure area. Include built-in timers (up to 60 second adjustable timing), door monitor with sounder alert, internal vertical pointability coverage, 12VDC or 24VDC power and selectable relay trigger with fail safe/fail secure modes.
 - 1. Acceptable Manufacturers:
 - a. Security Door Controls (SD) - MD-31D Series.
 - b. Securitron (SU) - XMS Series.
- B. Switching Power Supplies: Provide UL listed or recognized filtered and regulated power supplies. Provide single, dual, or multi-voltage units as shown in the hardware sets. Units must be expandable up to eight Class 2 power limited outputs. Units must include the capability to incorporate a battery backup option with integral battery charging capability in addition to operating the DC load in event of line voltage failure. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.
 - 1. Acceptable Manufacturers:
 - a. Securitron (SU) - AQ Series.

2.16 FABRICATION

- A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.17 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.2 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.3 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.
- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- E. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.4 FIELD QUALITY CONTROL

- A. Field Inspection: Supplier will perform a final inspection of installed door hardware and state in report whether work complies with or deviates from requirements, including whether door hardware is properly installed, operating and adjusted.

3.5 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.6 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.7 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.8 DOOR HARDWARE SCHEDULE

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.

- B. Manufacturer's Abbreviations:

1. MK - McKinney
2. PE - Pemko
3. RO - Rockwood
4. SA - Sargent
5. HS - HES
6. RF - Rixson
7. NO - Norton
8. SU - Securitron
9. 00 - Other

Hardware Schedule

Set: 1.0

Doors: 101A

2 Continuous Hinge	CFM83SLF-HD1 SER12		PE
1 Removable Mullion	L980A	US28	SA
1 Exit Device	43 55 56 8510 862	US32D	SA
1 Exit Device	DG163 43 55 56 8504 862	US32D	SA
1 Cylinder	DG1 980C1		SA
1 Core	DG1 6300	US15	SA
1 Door Closer	UNI7500 7786/7787 as required	689	NO
1 Door Operator	6020 D	689	NO
1 Threshold	271A x Door Width		PE

1 Gasketing	5110BL	PE
2 Sweep	315CN x Door Width	PE
2 ElectroLynx Harness	QC-C003	MK
2 ElectroLynx Harness	QC-C1500P	MK
1 Door Switch	503	NO
1 Door Switch	505	NO
1 Power Supply	AQD3	SU

Notes: Weatherstripping supplied by Aluminum frame supplier. Card reader, wires, door position switches and electrical hookup by Security Contractor.

System's Operation:

- Doors normally closed and locked during non-business hours.
- Entry after hours by presenting proper credentials to card reader to retract latch on exit for 7 seconds and the relock.
- Access control software will retract latches during business hours for free ingress.
- When exiting the signal switches in the exit bars will shunt any alarms.
- Free egress at all times.

Set: 2.0

Doors: 114D, 115

1 Continuous Hinge	CFM83SLF-HD1 SER12	PE
1 Exit Device	DG163 43 55 56 8504 862	US32D SA
1 Door Closer	J7500 x Drop Plate as required.	689 NO
1 Door Stop	482	US26D RO
1 Threshold	271A x Door Width	PE
1 Sweep	315CN x Door Width	PE
1 ElectroLynx Harness	QC-C003	MK
1 ElectroLynx Harness	QC-C1500P	MK
1 Power Supply	AQD3	SU

Notes: Weatherstripping supplied by Aluminum frame supplier. Card reader, wires, door position switches and electrical hookup by Security Contractor.

System's Operation:

- Door normally closed and locked during non-business hours.
- Entry after hours by presenting proper credentials to card reader to retract latch on exit for 7 seconds and the relock.
- Access control software will retract latches during business hours for free ingress.
- When exiting the signal switches in the exit bars will shunt any alarms.
- Free egress at all times.

Set: 3.0

Doors: 117C, 124

3 Hinge (heavy weight)	T4A3786 NRP 5" x 4-1/2"	US26D	MK
1 Storeroom Lock	DG1 28 10G04 LL	US26D	SA
1 Electric Strike	1006CS	630	HS
1 SMART Pac Bridge Rectifier	2005M3		HS
1 Strike Latch Guard	150		HS
1 Door Closer	UNI7500	689	NO
1 Kick Plate	K1050 10" x 2" LDW	US32D	RO
1 Threshold	171A x Door Width		PE
1 Rain Guard	346C x Door Width + 4"		PE
1 Gasketing	303AS x Door Size		PE
1 Sweep	315CN x Door Width		PE
1 ElectroLynx Harness	QC-C1500P		MK
1 Motion Sensor	XMS		SU
1 Power Supply	AQD3		SU

Notes: Card reader, wires, door position switches and electrical hookup by Security Contractor.

System's Operation:

- Doors normally closed and locked.
- Entry by presenting proper credentials to card reader to unlock electric strike for 5-7 seconds and then relock.
- Motion sensor to shunt alarm when person is exiting.
- Free egress at all times.

Set: 4.0

Doors: 125

3 Hinge (heavy weight)	T4A3786 NRP 5" x 4-1/2"	US26D	MK
1 Exit Device	DG163 43 8804 ETL	US32D	SA
1 Door Closer	UNI7500	689	NO
1 Kick Plate	K1050 10" x 2" LDW	US32D	RO
1 Threshold	171A x Door Width		PE
1 Rain Guard	346C x Door Width + 4"		PE
1 Gasketing	303AS x Door Size		PE
1 Sweep	315CN x Door Width		PE

Set: 5.0

Doors: 101B

2 Continuous Hinge	CFMSLF-HD1 x 1" Less than Door Height		PE
2 Push Bar & Pull	BF15747 x 3" Less than Door Width	US32D	RO
2 Door Closer	J7500 x Drop Plate as required.	689	NO
1 Door Operator	6020 D	689	NO
2 Door Stop	482	US26D	RO
1 Door Switch	503		NO

Notes: Weatherstripping supplied by Aluminum frame supplier.

Set: 6.0

Doors: 103

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Storeroom Lock	DG1 28 10G04 LL	US26D	SA
1 SMART Pac Bridge Rectifier	2005M3		HS
1 Electric Strike	7000C-12	630	HS
3 Silencer	608		RO
1 ElectroLynx Harness	QC-C1500P		MK
1 Motion Sensor	XMS		SU
1 Power Supply	AQD3		SU

Notes: Card reader, wires, door position switches and electrical hookup by Security Contractor.

System's Operation:

- Doors normally closed and locked.
- Entry by presenting proper credentials to card reader to unlock electric strike for 5-7 seconds and then relock.
- Motion sensor to shunt alarm when person is exiting.
- Free egress at all times.

Set: 7.0

Doors: 116

6 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Flush Bolt	2962	US26D	RO
1 Dust Proof Strike	570	US26D	RO
1 Storeroom Lock	DG1 28 10G04 LL	US26D	SA
1 Coordinator	1700	US28	RO
2 Surface Overhead Stop	10-X36	689	RF

2 Kick Plate	K1050 10" x 1" LDW	US32D	RO
2 Silencer	608		RO

Set: 8.0

Doors: 105, 120

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Storeroom Lock	DG1 28 10G04 LL	US26D	SA
1 Door Closer	7500	689	NO
1 Kick Plate	K1050 10" x 2" LDW	US32D	RO
1 Wall Stop	406	US32D	RO
3 Silencer	608		RO

Set: 9.0

Doors: 102, 104, 119, 122

3 Hinge	TA2714 NRP 4-1/2" x 4-1/2"	US26D	MK
1 Office Lock	DG1 28 10G05 LL	US26D	SA
1 Wall Stop	409	US32D	RO
3 Silencer	608		RO

Set: 10.0

Doors: 108, 109, 114A

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Classroom Lock	DG1 28 10G37 LL	US26D	SA
1 Kick Plate	K1050 10" x 2" LDW	US32D	RO
1 Wall Stop	406	US32D	RO
3 Silencer	608		RO

Set: 11.0

Doors: 110, 111

3 Hinge (heavy weight)	T4A3786 4-1/2" x 4-1/2"	US26D	MK
1 Push Plate	70E	US32D	RO
1 Pull Plate	107x70C	US32D	RO
1 Door Closer	7500	689	NO
1 Kick Plate	K1050 10" x 2" LDW	US32D	RO
1 Wall Stop	406	US32D	RO
3 Silencer	608		RO

Set: 12.0

Doors: 121

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Privacy Set	28 10U65 LL	US26D	SA
1 Surface Closer	8501	689	NO
1 Wall Stop	409	US32D	RO
3 Silencer	608		RO

Set: 13.0

Doors: 117A

3 Hinge	TA2714 4-1/2" x 4-1/2"	US26D	MK
1 Classroom Lock	DG1 28 10G37 LL	US26D	SA
1 Door Closer	7500	689	NO
1 Kick Plate	K1050 10" x 2" LDW	US32D	RO
1 Wall Stop	406	US32D	RO
3 Silencer	608		RO

Set: 14.0

Doors: 114B, 114C, 117B, 118, 123

1 Misc.	All hardware by door supplier.	00
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END OF SECTION 087100



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JOB NO. 5202.01

DATE: 04/13/16

SHEET:
SSK-01

New Bernalillo Senior Center
801 Rotary Park Road

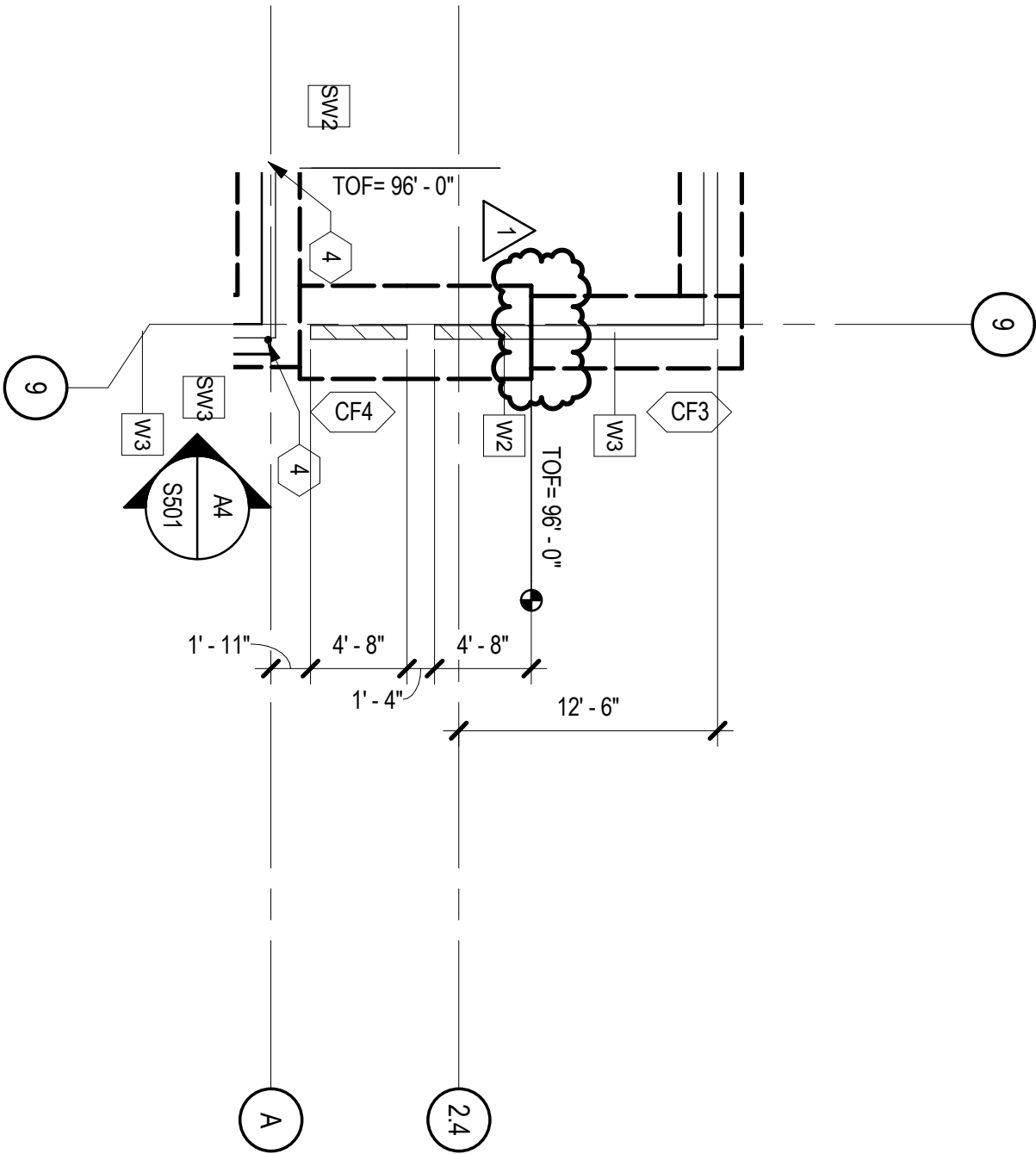
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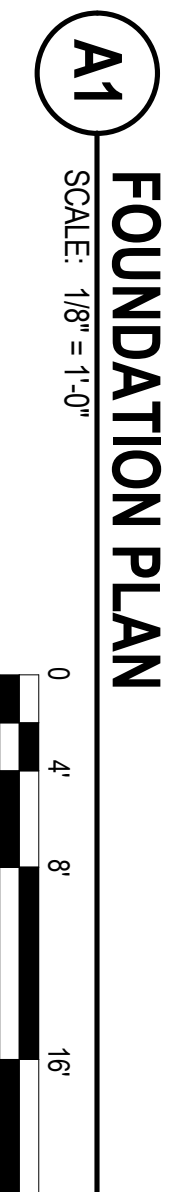
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SCALE: 1/8" = 1'-0"



FOUNDATION PLAN





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New Bernalillo Senior Center
801 Rotary Park Road

JOB NO. 5202.01 DATE: 04/13/16

SHEET:
SSK-02